

FENCES

The Standard Specifications are revised as follows:

SECTION 603, BEGIN LINE 1, DELETE AND INSERT AS FOLLOWS:

SECTION 603 -- FENCES

603.01 Description. This work shall consist of the construction of fence and gates in accordance with ~~these specifications and in reasonably close conformance with the lines and grades shown on the plans or as directed~~ *105.03*.

MATERIALS

603.02 Materials. Materials shall be in accordance with the following:

| | |
|---|----------------------|
| Barbed Wire | 910.18(b)4 |
| Chain Link Fabric | 910.18(b) |
| Concrete, Class A or B | 702 |
| Concrete, packaged <i>Packaged dry</i> Dry | 913.17 |
| <i>Farm Field/Woven Wire</i> | <i>910.18(a)</i> |
| Fence Posts | 910.13 |
| Gates | 910.18(d) |
| Tension Wire | 910.18(b)1 |
| Woven Wire | 910.18(a) |

CONSTRUCTION REQUIREMENTS

603.03 General Requirements. Clearing and grubbing shall be ~~performed as necessary to construct the fence to the required grade and alignment~~ *in accordance with 201.03*.

At locations where breaks in a run of fencing are required, or at intersections with existing fences, appropriate adjustment in post spacing shall be made in accordance with the requirements for the type of closure indicated.

When the plans require that posts, braces, or anchors be imbedded in concrete, temporary guys or braces shall be installed, if required to hold the posts in proper position, ~~until such time as the concrete has set sufficiently to hold the posts~~. Unless otherwise permitted, no materials shall be installed on posts or strain placed on guys and bracing set in concrete until ~~four days~~ *96 hours* have elapsed from the time of placing of the concrete.

The tops of all posts shall be set to the required grade and alignment. Cutting of the ~~tops of the posts will only be allowed only with approval and under the conditions specified with the approval of the Engineer~~. *Post caps shall be installed at the time the fence fabric is placed on the posts.*

Wire or fencing of the size and type required shall be firmly attached to the posts and braces in the manner indicated. All wires shall be stretched taut and installed to the required elevations.

At each location where an electric transmission, distribution, or secondary line crosses any of the types of fences covered by these specifications, a ground, conforming to applicable requirements of the National Electric Safety Code, shall be furnished and installed.

603.04 Setting Posts. ~~Unless otherwise directed, posts~~ *Posts*, including the concrete ~~base~~ *foundation* for posts, ~~braces and anchors~~ shall be set so that the entire fence is inside the right-of-way and ~~such that the fence can be placed on the side of the post facing the pavement roadway.~~ If an object, such as a tree, is located on the right-of-way and is to remain in place, the fence may be ~~set off line enough to miss the object~~ *adjusted to miss the obstruction*. There shall be a gradual offset for at least three posts in each direction ~~to eliminate sharp bends of the obstruction.~~

Line posts for farm field ~~type~~ fence shall be set on 5 m (16 ft) ~~maximum~~ centers, and ~~those~~ for chain link ~~type~~ fence on 3 m (10 ft) centers. In either case, a tolerance of ± 0.6 m (2 ft) in spacing will be allowed at special locations as approved. Spacing of these posts shall be as uniform as practicable under the existing conditions. However, additional posts shall be set ~~at each abrupt change in grade~~ *to maintain the bottom clearance dimensions as required*.

Pull posts shall be set at 150 m (500 ft) maximum intervals in straight runs and at each vertical angle point of 10 degrees or more.

Corner posts shall be set at each horizontal angle point of 10 degrees or more.

End, corner, and pull posts for both types of fence, line posts for chain link ~~type~~ fence and diagonal braces for farm field ~~type~~ fence shall be set in concrete as shown on the plans.

Except where rock is encountered, intermediate or line posts shall be driven and furnished with an approved anchor plate or other satisfactory device to hold the post in proper alignment and plumb. The plate or anchor shall be ~~satisfactorily~~ welded or riveted ~~to the post~~ with no less than two rivets ~~to the post~~.

Gate posts shall be set in concrete as shown on the plans.

Extra length posts shall be required at stream crossings as shown on the plans or as directed and also at ~~small~~ ground depressions where it is not practicable for the fencing to follow closely the contour of the ground. These posts shall be set in concrete as shown on the plans.

~~When so directed, at~~ *At* small stream crossings and ground depressions, the space below the fence fabric shall be closed with barbed or ground tension wire, either on horizontal lines or fanned, as shown on the plans or as directed. The wires shall be stretched taut between

and fastened to the posts to prevent vertical movement of the wires. Barbed or tension wire shall not be ~~required~~ *placed* where its installation would cause collecting drifts in the channel.

603.05 Placing Barbed and Tension Wire and Fabric. The bottom of the fabric shall be placed above the ground line as shown on the plans. Over irregular ground, a minimum of 25 mm (1 in.) and a maximum of ~~150~~ 100 mm (6 4 in.) clearance will be permitted ~~for the maximum distance shown on the plans~~. All necessary excavation and backfilling required shall be ~~performed~~ in accordance with ~~these provisions~~ 201.03.

The tension required to stretch the fabric and wire shall be applied by mechanical fence stretchers and with single wire stretchers designed and manufactured for the purpose, and in accordance with the fence manufacturer's recommendations.

All splices in the fabric and wire shall be securely made in accordance with the best practice and the manufacturer's recommendations, and by the use of tools designed for that purpose.

Farm field fence shall be placed by fastening one end and then applying sufficient tension to remove all slack before making permanent attachments elsewhere. The line wires shall be fastened to end, corner, and pull posts by wrapping the wires around the posts and tying the wire back on itself with no less than 1 1/2 tightly wrapped twists. ~~Such tying~~ *Tying* shall be ~~done~~ with tools designed for the purpose in accordance with the fence manufacturer's recommendations. This same method shall be used in placing barbed or tension wire. Fence fabric shall be fastened to intermediate or line posts with at least five wire ties ~~or other satisfactory methods~~. Barbed or tension wire shall be fastened in the same manner with one ~~satisfactory~~ fastening device for each post.

The top and bottom tension wires of chain link fence shall be placed, stretched taut, and secured at the ends and to all posts ~~in a satisfactory manner~~ before the fabric is placed. The ends of the fabric shall be secured by the use of stretcher-bars threaded through the loops of the fabric and secured to the posts by means of clamps with bolts and nuts. The number of clamps shall be as indicated on the plans. The fabric shall be placed by securing one end and then applying tension to remove all slack before making attachments elsewhere. The fabric shall be fastened to the line posts and to the top and bottom tension wires with tie wires ~~or aluminum bands~~ spaced as shown on the plans.

603.06 Resetting Fence. Resetting fence shall consist of the removal of existing fence within the *specified* limits ~~of the new improvement~~ and, if necessary, storing it ~~in a careful manner~~ and then resetting it ~~when so shown on~~ *in accordance with* the plans, or as ~~otherwise~~ directed. Resetting *fence* shall be in accordance with ~~applicable provisions of this specification for setting new fence~~ 603.03, 603.04, and 603.05 ~~and shall include the replacement of damaged~~ *Damaged* or missing parts, including posts *shall be replaced*.

603.07 Method of Measurement. Fence and resetting fence will be measured by the meter (linear foot) *for the type specified*. Measurement will be made along the top of the fence from outside to outside of end posts for each continuous run of fence.

Gates will be measured as complete units of the size and type specified.

603.08 Basis of Payment. The accepted quantities of fence and resetting fence will be paid for at the contract unit price per meter (linear foot) *for the type specified, complete in place*. Gates will be paid for at the contract unit price per each for fence gate, of the type and size specified, complete in place.

Payment will be made under:

| Metric Pay Item | Metric Pay Unit Symbol |
|--|--|
| (English Pay Item) | English Pay Unit Symbol |
| Pay Item | Metric Pay Unit Symbol (English Pay Unit Symbol) |
| Fence, _____, _____ mm (<i>in.</i>) | m (<i>LFT</i>) |
| type height | |
| (Fence, _____, _____ in. | LFT) |
| type height | |
| Fence, _____, Reset..... | m (<i>LFT</i>) |
| type | |
| Fence, Farm Field, Barbed Wire, _____ mm (<i>in.</i>) | m (<i>LFT</i>) |
| (Fence, Farm Field, Barbed Wire, _____ in. | LFT) |
| Fence, Farm Field, Tension Wire, _____ mm (<i>in.</i>) | m (<i>LFT</i>) |
| (Fence, Farm Field, Tension Wire, _____ in. | LFT) |
| Fence Gate, _____, _____ mm (<i>in.</i>) x _____ m (<i>ft</i>) | EACH |
| type height length | |
| (Fence Gate, _____, _____ in. x _____ ft | EACH) |
| type height length | |

The cost of adding grounding in accordance with the National Electric Safety Code including all materials, and labor shall be included in the cost of the fence.

The cost of fence, and corner, end, line, and pull posts shall be included in the cost of the fence.

The cost of fence, post and miscellaneous hardware shall be in the cost of the gate.

The cost of all miscellaneous hardware related to the type of fence including brace connections, caps, clips, clamps, hinges, rivets, ties, truss rods, diagonal braces and stretcher bars shall be included in the cost of the fence.

The cost of concrete for posts, braces or anchors shall be included in the cost of the fence and gates.

The cost of removal, storage, re-installation, and the replacement of damaged or missing parts shall be included in the cost of the resetting fence.

